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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/665,680	09/19/2003	Kendra Gallup	10030768-1	6256

7590 10/06/2005  
AGILENT TECHNOLOGIES, INC.  
Legal Department, DL429  
Intellectual Property Administration  
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Loveland, CO 80537-0599

EXAMINER

CHIAM, DINH D

ART UNIT	PAPER NUMBER
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2883

DATE MAILED: 10/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

EJL

**Office Action Summary**

Application No.

10/665,680

Applicant(s)

GALLUP ET AL.

Examiner

Erin D. Chiem

Art Unit

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**-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --****Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) ☒ Responsive to communication(s) filed on 20 July 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) ☒ Claim(s) 1-19 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-19 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 9/19/03 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

**Priority under 35 U.S.C. § 119**

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

**Attachment(s)**

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_.
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_.

### **DETAILED ACTION**

This office action is made in response to the amendment filed in July 20, 2005.

Independent claims 1 and 10 are amended.

### ***Drawings***

The drawings are objected to under 37 CFR 1.83(a). The drawings must show every feature of the invention specified in the claims. Therefore, the amended limitation of a die mounted on the sub-mount and containing and edge-emitting laser that is electrically coupled to the conductive traces must be shown or the feature(s) canceled from the claim(s). No new matter should be entered.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. Each drawing sheet submitted after the filing date of an application must be labeled in the top margin as either "Replacement Sheet" or "New Sheet" pursuant to 37 CFR 1.121(d). If the changes are not accepted by the examiner, the applicant will

be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 6, 7, 10, 14, 17 and 18 are rejected under 35 U.S.C. 102(b) as being anticipated by Yamamoto et al. (US 5883988). Yamamoto et al. teach a photoreception device comprising a sub-mount containing conductive traces (Fig. 4A and 4B, 401) and an edge-emitting laser (col. 9, line 32-33) electrically coupled to the conductive traces (col. 31, line 36-38) and a reflector (col. 1, line 10-17 and col. 31, line 15-19) positioned to reflect an optical signal from the edge-emitting laser through the sub-mount and the inner wall of the cavity in a cap overlying the die (fig. 6,10,11,19,21,24,25; element 15). In column 16 lines 14-15, Yamamoto teaches the wire bonding process that is an intrinsic step for mounting a die on the sub-mount containing the edge-emitting laser. Furthermore, Yamamoto et al. teach hermetically seal the die in the cavity (col. 11, line 60-64). In teaching the apparatus drawn to claims 1-9, Yamamoto et al. also meet the process limitations drawn to claims 10-16.

***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 2, 11, and 19 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto et al. in view of Freeman et al. (US 5,195,156).

Yamamoto et al. teach a device comprising a sub-mount with an edge-emitting laser electrically coupled to the conductive traces and a reflector positioned to reflect an optical signal from the laser through the sub-mount. However, Yamamoto et al. do not teach an alignment post attached to the sub-mount where the optical signal emerges from the sub-mount.

An optical fiber connector assembly which employs a laser emitting diodes formed on a semiconductor wafer, similar to one taught by Yamamoto. The laser diode is mounted in a package 103, shown in Fig. 1, and Freeman further teaches an alignment post 200 which acts as a passive alignment tool to direct the emitting light from the laser diode in the package 103 to be transmitted to the desired destination.

Since Freeman et al. and Yamamoto et al. are both from the same field of endeavor, the purpose disclosed by Freeman et al. would have been recognized in the pertinent art of Yamamoto et al.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to provide an alignment method such as the alignment posts taught by Freeman et al. such that the invented optical device may allow light to be coupled into the device or perhaps made available for light to be coupled out such that the signal maybe transmitted out.

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The alignment post as taught by Freeman et al. allows the optical device to easily align the optical signal being transmitted by the fiber into another device which have means to accept the alignment posts made with specific alignment parameters.

Claim 3-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto et al. In a prior art disclosure, Fig. 1B, Yamamoto et al. teach having a lens etched in the sub-mount to be in the path of the optical signal to accumulate light in a narrower path and/or diffract unwanted wavelengths. It would have been obvious at the time the invention was made to a person having ordinary skill in the art to etch a microlens into an optical semiconductor substrate, such as one taught by Yamamoto et al., such that one may control which electrons are excited to initiate the migration of the electrons to the holes, the basic building block of semiconductor technology functions (col. 2, line 43-53).

Claims 8, 9, 12, and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto et al. in view of Ando et al. (US 2001/0023920 B2).

Yamamoto et al. teach a device comprising a sub-mount with an edge-emitting laser electrically coupled to the conductive traces and a reflector positioned to reflect an optical signal from the laser through the sub-mount. However, Yamamoto et al. do not expressly teach a transparent encapsulant attached to the sub-mount and wherein the encapsulant comprises silicone.

Ando et al. teach methods of manufacturing optoelectronic devices and specifically to protect the optoelectronic devices from the environment by making lids and/or caps out of a clear plastic resin and to further moisture proof the device, Ando et al. teach filling the space in which the lid and/or cap covers with a silicone gel [0010].

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Since Ando et al. and Yamamoto et al. are both from the same field of endeavor, the purpose disclosed by Ando et al. would have been recognized in the pertinent art of Yamamoto et al.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to encapsulate the optoelectronic device on the substrate to keep moisture out. By using a clear plastic material and silicone gel as the encapsulant, the reflective loss can be reduced and employing clear plastic material for making a lid greatly reduce manufacturing costs.

Claims 15 and 16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Yamamoto et al. and Mizutani et al. (US 5822352).

In teaching the apparatus, Yamamoto et al. also teach the process limitations of electrically connecting a laser to a sub-mount and attaching a reflector such that the optical signal is reflected through the sub-mount. However, Yamamoto et al. do not expressly teach electrically connecting the laser comprises connecting a plurality of lasers to a sub-mount wafer that includes the sub-mount and furthermore, cutting the sub-mount wafer to separate sub-mount from similar sub-mounts.

Mizutani et al. teach an optoelectronic apparatus having laser structures grown by a crystal growth on to the wafer (col. 13, line 53-55). And furthermore the crystal growth method teach by Mizutani et al. is also commonly used in the semiconductor art for cost effective method of forming transistors, in this case optoelectronic devices, all on the same wafer and further cut the separately grown components on the wafers into separate parts.

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Since Mizutani et al. and Yamamoto et al. are both from the same field of endeavor, the purpose disclosed by Mizutani et al. would have been recognized in the pertinent art of Yamamoto et al.

It would have been obvious at the time the invention was made to a person having ordinary skill in the art to apply the method used to produce semiconductors, crystal growth on same wafer, for the making of an optoelectronic device since the material used are semiconductor material and have the same characteristics of semiconductor components. Such methods have been found to be cost effective for mass production.

#### *Response to Arguments*

Applicant's arguments filed on July 7, 2005 have been fully considered but they are not persuasive. All of the limitations are anticipated by Yamamoto and the Examiner reasserts the rejections made under 35 U.S.C. 102(b) and all arguments against the rejections made under 35 U.S.C. 103(a) that are dependent on the independent claims 1 and 10.

Applicant's arguments with respect to claims 2 and 11 have been considered but are moot in view of the new ground(s) of rejection.

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).



*Conclusion*

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a).

Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

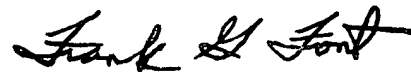
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Erin D. Chiem whose telephone number is (571) 272-3102. The examiner can normally be reached on Monday - Thursday 9AM - 5PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Frank G. Font can be reached on (571) 272-2415. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Erin D Chiem  
Examiner  
Art Unit 2883



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